

We claim:

1. A process for preparing mono- or diesters of  
5 polytetrahydrofuran or of tetrahydrofuran copolymers by  
polymerizing tetrahydrofuran in the presence of at least one  
telogen and/or of a comonomer over an acidic catalyst,  
wherein the polymerization reactor is started up using a  
mixture of polytetrahydrofuran, the mono- or diesters of  
10 polytetrahydrofuran and/or of the tetrahydrofuran copolymers,  
tetrahydrofuran, any comonomer and at least one carboxylic  
acid and/or one carboxylic anhydride.
2. A process as claimed in claim 1, wherein the mono- or  
15 diesters of polytetrahydrofuran or of the tetrahydrofuran  
copolymers or the polytetrahydrofuran used for startup have  
an average molecular weight  $M_n$  of from 650 to 4000.
3. A process as claimed in claim 1 or 2, wherein the  
20 concentration of the polymer used for startup is from 20 to  
80% by weight, based on the total amount of the mixture used  
for startup.
4. A process as claimed in any of claims 1 to 3, wherein the  
25 mixture used for startup comprises from 7 to 80% by weight of  
tetrahydrofuran or the total amount of tetrahydrofuran and  
comonomer, based on the total amount of the mixture used for  
startup.
- 30 5. A process as claimed in any of claims 1 to 4, wherein from  
0.5 to 10% by weight of carboxylic anhydride are used for  
startup, based on the entire amount of the mixture used for  
startup.
- 35 6. A process as claimed in any of claims 1 to 5, wherein acetic  
anhydride is used.
7. A process as claimed in any of claims 1 to 6, wherein, in  
40 addition to the carboxylic anhydride, up to 3% by weight,  
based on the total amount of the mixture used for startup, of  
carboxylic acid are used.
8. A process as claimed in any of claims 1 to 7, wherein an  
45 inert solvent is added to the mixture used for starting up  
the polymerization reactor.

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5 polytetrahydrofuran or of tetrahydrofuran copolymers by  
polymerizing tetrahydrofuran in the presence of at least one  
telogen and/or of a comonomer over an acidic catalyst,  
wherein the polymerization reactor is started up using a  
mixture of the polymer to be prepared by the process,  
10 polytetrahydrofuran, the mono- or diesters of  
polytetrahydrofuran and/or of the tetrahydrofuran copolymers,  
tetrahydrofuran, any comonomer and at least one carboxylic  
anhydride.
- 15 2. A process as claimed in claim 1, wherein the mono- or  
diesters of polytetrahydrofuran or of the tetrahydrofuran  
copolymers or the polytetrahydrofuran used for startup have  
an average molecular weight  $M_n$  of from 650 to 4000.
- 20 3. A process as claimed in claim 1 or 2, wherein the  
concentration of the polymer used for startup is from 20 to  
80% by weight, based on the total amount of the mixture used  
for startup.
- 25 4. A process as claimed in any of claims 1 to 3, wherein the  
mixture used for startup comprises from 7 to 80% by weight of  
tetrahydrofuran or the total amount of tetrahydrofuran and  
comonomer, based on the total amount of the mixture used for  
startup.
- 30 5. A process as claimed in any of claims 1 to 4, wherein from  
0.5 to 10% by weight of carboxylic anhydride are used for  
startup, based on the entire amount of the mixture used for  
startup.
- 35 6. A process as claimed in any of claims 1 to 5, wherein acetic  
anhydride is used.
- 40 7. A process as claimed in any of claims 1 to 6, wherein, in  
addition to the carboxylic anhydride, up to 3% by weight,  
based on the total amount of the mixture used for startup, of  
carboxylic acid are used.
- 45 8. A process as claimed in any of claims 1 to 7, wherein an  
inert solvent is added to the mixture used for starting up  
the polymerization reactor.

Preparation of mono- and diesters of polytetrahydrofuran and of tetrahydrofuran copolymers

5 Abstract

The present invention provides a process for preparing mono- or diesters of polytetrahydrofuran or of tetrahydrofuran copolymers by polymerizing tetrahydrofuran in the presence of at least one  
10 telogen and/or of a comonomer over an acidic catalyst, wherein the polymerization reactor is started up using a mixture of polytetrahydrofuran, the mono- or diesters of polytetrahydrofuran and/or of the THF copolymers, tetrahydrofuran, any comonomer and at least one carboxylic acid and/or one carboxylic anhydride.

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